

WE CLAIM

1. A wireless telecommunications system for connecting to a data link and for routing data packets between the data link and a subscriber terminal of the wireless telecommunications system, the subscriber terminal being connectable to a central terminal of the wireless telecommunications system via a radio resource, the wireless telecommunications system providing a group of communication channels arranged to utilise the radio resource for transmission of data packets, the group being shared by a plurality of subscriber terminals and consisting of downlink communication channels for transmission of data packets from the central terminal to the subscriber terminals and uplink communication channels for transmission of data packets from the subscriber terminals to the central terminal, the wireless telecommunications system further comprising:
- 15 a subscriber controller within the subscriber terminal arranged, when a data packet is to be transmitted to the data link, to acquire an uplink communication channel from the group to enable that data packet to be transmitted via the central terminal to the data link;
- 20 a resource monitor for receiving information concerning the traffic loading of predetermined elements of the wireless telecommunications system, and for applying predetermined criteria based on that information to determine how long the uplink communication channel may be acquired for by the subscriber terminal before causing the subscriber controller to release the uplink communication channel for use by other subscriber terminals.
- 25 2. A wireless telecommunications system as claimed in Claim 1, further comprising a congestion determination unit for determining the information concerning the traffic loading of the predetermined elements of the wireless telecommunications system and for periodically broadcasting that information to the subscriber terminal, the resource monitor being provided within the subscriber terminal and being arranged to use that
- 30 broadcast information when applying the predetermined criteria.

3. A wireless telecommunications system as claimed in Claim 2, wherein the resource monitor is further arranged to receive local information relating to its subscriber terminal and uses that local information in addition to the broadcast information when applying the predetermined criteria.

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4. A wireless telecommunications system as claimed in Claim 1, wherein the resource monitor is arranged to determine from the received information a first parameter identifying the maximum hold time of the uplink communication channel after which it must be released even if more data packets are waiting to be sent by the subscriber terminal, the first parameter being used by the resource monitor when applying the predetermined criteria.

5. A wireless telecommunications system as claimed in Claim 1, wherein the resource monitor is arranged to determine from the received information a second parameter identifying the minimum time the uplink communication channel must be released for before another acquisition of an uplink channel in the group is attempted by the subscriber terminal, the second parameter being used by the resource monitor when applying the predetermined criteria.

6. A wireless telecommunications system as claimed in Claim 1, wherein the resource monitor is arranged to determine a third parameter identifying a programmable timeout period, the third parameter being used by the resource monitor when applying the predetermined criteria, such that after each data packet is sent, the programmable timeout period is reset, and if no further packets have been sent by the time the programmable timeout period expires, the uplink communication channel is released by the subscriber terminal.

7. A wireless communication channel as claimed in Claim 6 wherein the resource monitor is arranged to determine from the received information a first parameter identifying the maximum hold time of the uplink communication channel after which it must be released even if more data packets are waiting to be sent by the subscriber terminal, the first parameter being used by the resource monitor when applying the

predetermined criteria, and wherein the first and third parameters are used by the resource monitor when applying the predetermined criteria, whereby even if the programmable timeout period has not expired, the uplink communication channel will still be released if the maximum hold time of the uplink communication channel has been reached.

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8. A wireless telecommunications system as claimed Claim 2, wherein the information concerning the traffic loading of the predetermined elements of the wireless telecommunications system is determined by the congestion determination unit based on the actual traffic information from those predetermined elements and the number of communication channels in the group.

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9. A wireless telecommunications system as claimed in Claim 1, wherein the radio resource is one or more frequency channels, and the communication channels are orthogonal channels.

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10. A wireless telecommunications system as claimed in Claim 1, wherein the group of communication channels is programmable, and information identifying the communication channels forming the group is distributed to the subscriber terminal over a broadcast communication channel.

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11. A subscriber terminal for a wireless telecommunications system arranged to handle data packets routed between a data link and the subscriber terminal via the wireless telecommunications system, the subscriber terminal being connectable to a central terminal of the wireless telecommunications system via a radio resource, the wireless telecommunications system providing a group of communication channels arranged to utilise the radio resource for transmission of data packets, the group being shared by a plurality of subscriber terminals and consisting of downlink communication channels for transmission of data packets from the central terminal to the subscriber terminals and uplink communication channels for transmission of data packets from the subscriber terminals to the central terminal, the subscriber terminal comprising:

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a subscriber controller arranged, when a data packet is to be transmitted to the data link, to acquire an uplink communication channel from the group to enable that data packet to be transmitted via the central terminal to the data link; and

5 a resource monitor for receiving information concerning the traffic loading of predetermined elements of the wireless telecommunications system, and for applying predetermined criteria based on that information to determine how long the uplink communication channel may be acquired for by the subscriber terminal before causing the subscriber controller to release the uplink communication channel for use by other subscriber terminals.

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12. A method of operating a wireless telecommunications system to route data packets between a data link connected to the wireless telecommunications system and a subscriber terminal of the wireless telecommunications system, the subscriber terminal being connectable to a central terminal of the wireless telecommunications system via a
15 radio resource, the wireless telecommunications system providing a group of communication channels arranged to utilise the radio resource for transmission of data packets, the group being shared by a plurality of subscriber terminals and consisting of downlink communication channels for transmission of data packets from the central terminal to the subscriber terminals and uplink communication channels for transmission
20 of data packets from the subscriber terminals to the central terminal, the method comprising the steps of:

(a) when a data packet is to be transmitted to the data link by the subscriber terminal, causing the subscriber terminal to acquire an uplink communication channel from the group to enable that data packet to be transmitted via the central terminal to the
25 data link;

(b) receiving information concerning the traffic loading of predetermined elements of the wireless telecommunications system;

(c) applying predetermined criteria based on the information received at said step (b) to determine how long the uplink communication channel may be acquired for by
30 the subscriber terminal before being released by the subscriber terminal for use by other subscriber terminals; and

(d) causing the subscriber terminal to release the uplink communication channel when indicated by the determination performed at said step (c).

13. A method as claimed in Claim 12, further comprising the steps of:

5 determining the information concerning the traffic loading of the predetermined elements of the wireless telecommunications system and periodically broadcasting that information to the subscriber terminal;

said steps (b) and (c) then being performed within the subscriber terminal.

10 14. A computer program operable to configure a wireless telecommunications system to perform a method as claimed in Claim 12.

15 15. A carrier medium comprising a computer program as claimed in Claim 14.